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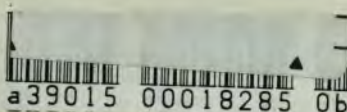
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STATE OF MICHIGAN

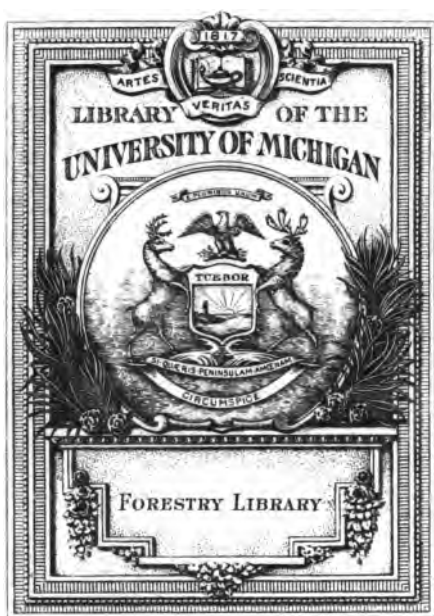
1913

A Supplement to Amplified Report, 1912

With Recommendations to Legislature and Appended
Fiscal Report and Statistics of Forest Fires.

WILLIAM R. OATES,
State Game, Fish and Forestry Warden

LANSING, MICHIGAN
WYLLKOPF HALLENBECK CRAWFORD CO., STATE PRINTERS
1914



FORESTRY REPORT

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LETTER OF TRANSMITTAL.

To His Excellency, Woodbridge N. Ferris, Governor of Michigan:

I have the honor to present herewith the forestry report of this department, 1913.

WILLIAM R. OATES,
State Game, Fish and Forestry Warden.

REVIEW OF FIRE LOSS.

Loss by forest fires in Michigan, which had approximated upwards of one million dollars annually for fifty years, dropped from \$3,470,000 in 1911 to \$67,000 in 1912 and to less than \$23,000 in 1913.

AGENCIES IN SUPPRESSION.

Unprecedented drouth in midsummer, 1913, made the season anything but a favorable one for the prevention and suppression of fires. The cause of the remarkable reduction of annual loss must be assigned to working agencies rather than conditions.

This department cannot in fairness claim more than a nominal credit in the diminution of forest fires. It submits that the curbing, suppression and prevention of forest fires and the resultant reduction of loss is due to means here cited:

(1) A systematic and thorough organization of the township supervisors of the forest district as local fire wardens and the educational posters and literature on the suppression of forest fires, placed through them before the township communities.

(2) The improvement and standardizing of locomotives and rights-of-way inspection.

(3) The moral enlistment of 3,000 school boys of the forest district as Michigan Forest Scouts, with the prime purpose of prevention of forest fires and reforestation.

(4) The compilation of methods of forest fire prevention, in service by the numerous railways of the forest district, appearing in the report of this department, 1912, circulated for railway employees and the general public.

(5) The efficient scientific methods of forest protection introduced in this State through the United States government in its forest reserve service.

(6) The protective service instituted by the Public Domain Commission on its reserves of State lands.

(7) The practical and energetic field work of the several independent lumbermen's protective association.

(8) The splendid publicity given by the city and country press of Michigan on all matters pertaining to forestry and the prevention and suppression of forest fires.

FIELD WORK EFFICIENT.

Notable, in view of the marked reduction of loss by forest fires, is the fact that many more fires were reported to the department in 1913 than were reported in 1911, when the loss on merchantable timber and other readily estimated property was stupendous. That so many fires were combatted with so small an amount of loss is obvious testimony to the standard of field work.

SUPERVISORS SUPPLETIVE.

Complimentary to the work of the regular State wardens is the splendid service given by the township supervisors as local wardens in 1913.

Interspersing regular circular instructions to supervisors with personal letters inducing attention and response, this department has impressed on the individual his duties and responsibility as township fire warden.

Local activity of the supervisors relieved the limited number of State deputies from isolated service at any one fire affording them opportunity for general district supervision in advisory field work.

RAILWAY LOCOMOTIVE AND RIGHTS OF WAY INSPECTION.

Under the system of inspection standardized by this department in 1912, deputies have examined at frequent intervals, during the dry season, the front ends and ashpans of each separate locomotive in service in the forest districts.

Locomotives found in service in a condition not conforming in a reasonable manner to the requirements of the department have been condemned and ordered out of service. The officials and employes of roads on which such conditions have been found have been held responsible for changes in strict compliance with the law.

Dissemination of the cooperative opinions of railway officials on forest fire prevention, exploited by this department in its report for 1912, has proven of great value to the railways, as such, and to the State.

Claims for damage by careless setting of fires, presented by settlers and farmers abutting the railway lines in past years in large total, are insignificant in 1913, except as indicating the reduction of such damage.

Appreciating the sincerity of the fire-preventive work of the department, railways, heretofore protesting against enforced clearing of their rights-of-way in accord with the provisions of the fire laws, are heartily cooperating in such clearing.

Conditions on mixed passenger and logging, narrow-gauge, lines have greatly improved in the past two years.

Peremptory orders from the Public Domain Commission, October, 1913, for the immediate clearing of rights of way in strict conformity to the law on all lines traversing or skirting its lands, found many of the "stubborn" logging railways well advanced in standard requirements.

On all logging roads and spurs of questionable permanency, where the hazard of commercial returns does not allow the great cost of standard

clearing, the State inspector has required that patrols be maintained during the dry seasons.

Under the direction of the State inspector, fire warning placards furnished by this department have been posted in series by the railways.

Inspection has not overlooked the cleared right of way and when dead or dry grass has appeared a menace to adjoining slash or timber the railways have been ordered to burn it, under cautionary guard and with favorable winds. When such grass is ignited at the limit of a cleared roadside it has been found that the fire is automatically extinguished on arriving at the gravel ballasted trackway. With a reverse wind the opposite side of the right of way may be burned.

Rights of way inspection is not perfunctory, for the deputy from a rear coach platform takes in every detail of every rod of way. Where such scanning is unsatisfactory he proceeds on foot from the nearest station so that his knowledge and findings regarding conditions of the way are complete. He knows the townships which the ways traverse and troublesome conditions are localized and reported for correction to the supervisor, to the railway section crew, division foreman and to the superintendent of the railway.

So thorough has been the field inspection and filed reports of same that this department could furnish on request a detailed statement of conditions, on and abutting, practically every separate mile of the railways of the forest district. Even the transitory logging spurs are transferred and relocated at such timely intervals in the official records as to afford immediate and positive data.

With the cooperation of executive officials our inspector has enlisted the aid of every department of the railway organization; the master mechanics, trainmasters, the shop and round house foremen and the section crews are in concerted and harmonious spirit for prevention of forest fires.

Presupposing and guarding against the carelessness of new and unformed workmen and officials, preliminary inspection of all the locomotives assigned to the danger zone are made in February and March.

In the shops the inspector of this department does not depend on the service of the mechanics under his instruction, but puts on his shop garments and personally enters the front ends of all locomotives to assure himself of the stability and safe condition of the mesh. Passing inspection of mesh and ashpan the locomotive is pronounced safe for entrance in summer work.

Supplanting of unstable lugs, which allowed sagging of the mesh and resultant vents through which sparks might escape, with strong form-fitting angle irons has relieved the menacing feature of many locomotives.

Another innovation and a requirement, insisted on by the inspector, has been the covering of all draft holes, in ashpans, with protective screens. In further precaution all ashpans taking the draft from the upper sides were ordered equipped with an additional upright wall flange, in order to prevent the possibility of the strewing of live clinkers on the rights of way as a result of the "rocking" of locomotives.

While results are necessarily speculative, it is a reasonable assertion that the policy of systematic inspection of railway locomotives and rights of way has reduced the loss through forest fires by carelessness of railway officials and employes more than 50 per cent in the past two years.

Recommendations for remedial legislation pertaining to railways traversing the forest districts will be found in succeeding text, under the general caption of "recommendations."

SCHOOL BOYS BIG FACTOR.

Following the disastrous fires of 1911, culminationg in the destruction of the populous towns of Oscoda and Au Sable, July 11, this department exploited the organization of the school boys of the forest districts for forest fire service.

In 1912 fifteen hundred boys were enrolled as moral auxiliaries to the State fire wardens, under the title of Michigan Forest Scouts. Besides extinguishing 509 fires, some of which were of magnitude, the Scouts did effective work, as messengers for the regular wardens and supervisors and as educators in forest fire prevention.

In 1913 the Forest Scouts, increased to a membership of three thousand, more than duplicated the work of the previous year with a record of 731 fires extinguished and reported.

During May, 1913, Forest Scouts established object lessons in reforestation by the planting of unit forests of 1,000 trees each near many of the principal towns and villages of the State.

Reports from the Scout forests indicate good stands of seedlings with thrifty growth, excepting the towns of the Huron shore where a six weeks drouth followed planting. The stands show an average live catch of more than 60 per cent.

Scotch pine and white pine have proven the hardiest stock. Contrary to expectations, western yellow pine leads Norway, lodge-pole pine, and three varieties of spruce in hardiness.

These seedlings were furnished the department by the Public Domain Commission and transferred to the Scouts on a frank tariff by the railways of the State. Under the supervision of State Forester, Marcus Schaaf, the seedlings were packed for transportation with exceptional care and reached the Scout companies in perfect condition.

As a result of the educational campaign by the Scouts it is doubtful if there is today any English speaking adult in the forest district who does not appreciate the disastrous effects of fires or has not some knowledge of the methods of fighting same and precautionary measures.

Inasmuch as it has been noted that many forest fires were set by alien immigrants, an especial effort has been made to acquaint this class of people with preventive knowledge.

Among the Finnish, Italian, Roumanian, Servian and Hungarian settlements, particularly in the counties of Marquette, Baraga, Iron, Houghton and Ontonagon, Scout companies for the several nationalities have been organized and the English text in fire fighting translated by lecturing interpreters.

Activity of the Scouts has proven a stimulus to the supervisors of townships, for they appreciate his duty as local fire warden and are not inclined to allow him to shirk it.

FEDERAL METHODS HELP.

Establishment by the United States forest service of the Michigan Forest Reserve, divided in the peninsulas, has proven of educational and practical benefit in the forest fire situation.

Introduction of scientific methods of forest supervision and fire fighting

has been beneficial, but the *reforestation* idea, established in apparent permanency with the prestige of the United States government to uphold it, is the big, good factor of the federal innovation.

Thousands of seedlings, germanated on the reserves, show good progress toward strong sapling growth. Extensive experiments in soil and condition production exchanges knowledge of scientific reforestation with practical knowledge which is first hand with State officials who have lived on the ground, through years of faulty lumbering operations with their resultant fires.

PUBLIC DOMAIN PROGRESSIVE.

On the 300,000 acres of timber lands controlled by the Public Domain Commission steady and appreciable progress has been made in the care of the forests.

In the separate reserves of Luce, Roscommon, Houghton, and Grand Traverse counties the best methods of the federal forest service in reforestation, fire prevention and encouragement of sapling and older growth are in use.

Watch towers and fire lines guard the danger points of heavy ground litter which is under constant surveillance during the dry season.

Regular patrol paths have been surveyed and dangerous grasses and logger's old cuttings are burned when favorable wind and ground conditions preclude spread of fire which might cause loss.

State Forester, Marcus Schaaf makes the pertinent and interesting statement that this group of forests, which now has little more than a pro-age value, will have a merchantable timber value in less than 75 years of \$250,000,000.

LUMBERMEN GIVE AID.

In protecting their own holdings, the lumbermen's fire protective associations of the two peninsulas have materially aided the State department.

These organizations, the Northern Protective Association in the Upper Peninsula and the Michigan Hardwood Manufacturer's Protective Association in the Lower Peninsula, have expended several times the amount employed by the State in fire prevention.

Private holdings guarded by the associations patrols have exercised protection to contiguous State lands. This protection has been markedly obvious during the season of 1913. The field management of the associations has been intelligent and energetic.

PRESS PROMOTES PREVENTION.

It is hard to estimate the proportionate aid to prevention and suppression of fires given by the city and country press of Michigan.

Not only have the metropolitan papers carried in good display all forestry and forest fire prevention copy, but the country press has given forest matters much attention in its local pages, while carrying on its plate-print "forest notes" of interest.

This dissemination of forestry knowledge is undoubtedly educating the people to the importance of individual carefulness in the matter of setting "clearing" fires or disposing of camp fire embers, cigar and cigarette stubs, pipe-heels or remnants of matches, which in combustion might cause dangerous fires.

STATE WARDENS DIRECT.

As cited in a preceding paragraph, the deputies of this department have given a more general executive turn to their work than heretofore.

Placing a township warden in immediate control of a local fire, the deputy had opportunity to keep in executive touch with his entire district.

Remarkable, considering the trifling loss, is the fact that the number of fires occurring in 1913 showed not even such nominal decrease as might be confidently expected as a result of the education against carelessness. The important and effective thing was that every fire which broke out was watched from its incipency and was almost continually under control.

Many of the fires were guardedly allowed to continue burning where the result would prove beneficial.

In some instances, where conditions were right, the fire front was diverted into old trap-slashings, thus removing what would otherwise prove continual menaces to environing timber and other property.

Not a single instance of dereliction of duty by any fire official has been called to the attention of this department in 1913. This statement includes in its commendation not only the regular and special State deputies, but township supervisors and lumbermen's association patrols.

NET RESULTS BENEFICIAL.

Summing up, it is conservative to assert that the net results of forest fires in Michigan in 1912 has proven, for the first time in 60 years, a benefit rather than a loss.

DANGEROUS CONDITIONS EXIST.

This conclusion does not warrant any feeling of real security in the control of forest fires in the future, for it is evident to all familiar with the situation that without the aid of suppletive agencies the provisions made by the State would prove grossly inadequate. The independent patrol by the lumbermen has no positive guarantee of continuance and the Scout work of the school boys is the result of patriotism which this department can ask for but not command.

In the counties of Ontonagon, Marquette, Dickinson, Delta and Luce, in the Upper Peninsula, there are more square miles of fire-trap slashings guarded by a state fire fund of \$10,000 than in the entire state of Minnesota where the annual fire fighting fund is more than \$100,000.00.

In the Lower Peninsula, Cheboygan, Charlevoix, Presque Isle, Montmorency, Crawford, Kalkaska, Missaukee and Wexford counties contain large areas of dangerous slashings which are a continual menace to life and property. Bisecting the farm lands of Alcona and Iosco counties is another large area of intermittent slashings.

This department concedes it as possible that conditions might obtain,

following prolonged summer drouth, when numerous fires originating in Cheboygan, Charlevoix and Presque Isle counties, fanned by continuous high winds, might join in a lake to lake wave of flame and sweep southward, leaving a wake of devastation and death surpassing in horror previous holocausts. Conditions cited might bring a similar conflagration in the Upper Peninsula, originating in Marquette, Ontonagon or Luce counties.

It is the opinion of this department that a continuous and systematic field patrol of the nine separate areas of dangerous slashings should supplement the work of the regular deputies and township supervisors. Further, it believes that failure to provide for such patrol should be termed an inexcusable negligence

RECOMMENDATIONS TO LEGISLATURE.

Provision for continuous daily patrol of the dangerous slashing areas of the forest districts, during the dry season.

Provision that this department may arbitrarily name the number of patrolmen which shall be assigned by logging and other railways, wherever their transitory spurs or general mileage lines do not conform to legal regulations of cleared right of way, to insure against forest fires; such patrol men to be employed by said railways at their own expense—penalty.

Provision that this department may seize and condemn and hold in condemnation any bins, tenders or storage of inferior coal or wood fuel, during the dry season, the use of which in steaming locomotives is considered a menace to forests or property abutting the tracks of railways which are using or intend to use such coal or wood.

Provision for a penalty for the non-posting of fire-warning placards and literature which may be placed in the hands of railway officials by this department for the purpose indicated.

Provision for the legal standardizing of front-end mesh; that all locomotives in service in the forest district of the state, during the dry season, shall be equipped with a wire mesh of not less than No. 10 steel wire and not more than 3-16 inches square, or with perforated oblong steel plate, not more than 3-16 inches by 1 1-6 inches in length, and that such equipment shall be installed on strong angle irons, fitted to interior of front-end in a manner to pass the department inspection—penalty.

Provision is especially urged, exempting from taxation for a limited time, any private lands which may be set aside for reforestation.

Provision, that no person or persons shall set or cause to be set, any fire for the purpose of clearing any lands in the State of Michigan of any combustible material, except with the written consent of the Game, Fish and Forestry Warden, one of his deputies, or the supervisor of the township in which said clearing is to be accomplished; that in the unorganized townships consent may be obtained from supervisor of any adjoining township or the State Game, Fish and Forestry warden or one of his deputies—penalty.

FISCAL REPORT AND STATISTICS

OF

FOREST FIRES.

FOREST FIRES—YEAR 1913.

County.	No. fires.	Acres burned.	Kind of land burned.	Timber.	Other property.	Damage.	Cause.	Cost of putting out.
Albion.....	28	32,777	Plains, swamp, brush, slashing, jack pine, meadow.	Fine, mixed, hardwood.....	Fence, cemetery fence, logs.....	\$738 00	Campfires, matches, traction engine, unknown.	\$86 50
Alger.....	13	485	Hardwood, slashings, swamp.	Hardwood.....	Cordwood.....	300 00	Clearing, sparks from engine, lightning.	102 00
Alpena.....	65	3,112	Brush, pine, meadow, swamp, plains.	Fine.....	One set camps, fences.....	350 00	Unknown, hunters, steam shovel.	12 00
Antrim.....	4	8,140	Slashings, orchard.....	.....	Orchard.....	430 00	Sparks from engine, unknown, carleesnes.	848 50
Baraga.....	6	1,940	Slashings, swamp.....	Hardwood, hemlock, jack pine.....	.....	240 00	Sparks from engine, unknown.....	129 50
Bennie.....	33	14,055	Slashing, meadow, hardwood.....	Second growth hardwood.....	Cordwood.....	293 50	Lightning, unknown, sparks from engine.	616 40
Charlevoix.....	13	500	Plains, slashing, hardwood.....	Second growth hardwood, pine, scrub oak.	Pulpwood, cedar.....	700 00	Unknown, carleesnes.....	156 00
Cheboygan.....	22	8,780	Slashing, plains, hardwood, hemlock.	.....	Log barn, house, 6,000 feet lumber.	1,705 00	Unknown, matches, threshing engine.	453 10
Chippewa.....	13	4,425	Fine, hardwood, swamp, slashing.	.....	.....	635 00	Unknown, clearing.....	270 40
Crawford.....	15	11,145	Plains, swamp, meadow.....	.....	.....	.....	Clearing, unknown, engines.....	301 30
Delta.....	2	2,200	Slashing.....	.....	Logs, lumber and cedar.....	11,685 00	Unknown, sparks from engine.....	55 50
Dickinson.....	14	2,080	Plains, hardwood.....	.....	Cars.....	975 00	Sparks from engine, clearing, unknown.	796 00
Gogebic.....	5	960	Slashing, hardwood.....	.....	Hemlock bark, decked hardwood timber, 5,000 ft. hemlock logs.	950 00	Unknown, clearing.....	481 50
Gd. Traverse.....	3	1,955	Hardwood, slashing.....	.....	Wood, timber, railroad ties.....	140 00	Unknown.....	113 40
Houghton.....	2	50	Meadow, slashing.....	.....	Fence posts.....	52 50	Unknown, clearing.....	115 60
Iosco.....	5	2,500	Slashing, swamp, pine, hardwood.	.....	.....	.....	Unknown, sparks from engine.....	.....
Iron.....	10	4,420	Hardwood, plains, meadow, slashings.	Second growth.....	Fences, timber.....	318 00	Sparks, clearing, unknown.....	230 70
Kalamazoo.....	1	10	Hardwood.....	.....	.....	.....	Unknown.....	13 50
Keweenaw.....	1	60	Meadow slashing.....	.....	.....	.....	Clearing.....	.....
Leelanau.....	5	3,020	Hardwood, slashing.....	.....	.....	.....	Unknown, campers, sparks from railroad and logging engine.	75 00
Leche.....	12	1,872	Slashing, hardwood meadow.....	.....	.....	100 00	Lumber, engine, clearing, unknown.	213 00
Manistee.....	15	7,555	Slashing, plains, stump, meadow.	.....	Fence.....	40 00	Unknown, sparks from engine, lightning.	195 50

FOREST FIRES—YEAR 1913. *Concluded.*

County.	No. fires.	Acres burned.	Kind of land burned.	Timber.	Other property.	Damage.	Cause.	Cost of putting out.
Marquette....	8	1,810	Pasture, hardwood, meadow, slashing.		Cordwood, sawmill, logs and railway cars.	\$1,650 00 20,000 00	Clearing, campers	\$109 00
Menominee....								
Missaukee....	11	13,491	Slashing, plains, jack pine.	Growing timber, jack and Norway pine.	Damage to birds nesting.	100 00	Clearing, cigar stubs, threshing engine.	
Montmorency..	4	7,675	Plains, meadow.	Young growth poplar and jack pine.	25,000 feet pine logs, barn, machinery.	2,125 00	Unknown.	41 00
Ogemaw.....		160						
Ontonagon....	1	80	Slashing.	Jack and white pine.	8,000 feet decked hemlock.	60 00	Carelessness.	270 00
Oscoda.....	10	13,688	Hardwood, swamp, plains, meadow.		Small game, cedar post timber fence posts.	435 00	Fishermen, unknown, clearing.	100 00
Osego.....	17	15,285	Pine, hardwood, slashing.	Hardwood, hemlock, small timber.	Small game, 30 telephone poles, partridge, rabbits.	3,150 00	Unknown, clearing, log-loader.	385 50
Presque Isle..	8	15,090	Hardwood, plains, swamp.	Cedar and hardwood.	Cedar logs.	350 00	Clearing, unknown.	67 00
Rosecommon...	3	6,600	Plains, swamp.	Young oak, poplar.	Two cottages, lumbering camps, rail fence, 45 apple trees.	1,189 00	Unknown, clearing, M. C. engine.	60 00
Schoolcraft...	3	320 1,400	Hardwood, plains, slashing, swamp.		Steam loader, sleds, ploughs, timber.	6,500 00	Logging engine.	
Wexford.....	7	3,740	Slashing, plains, hardwood, swamp.	Green timber.	Cordwood.	4,900 00	Logging engine.	382 50
	731		(Minor fires reported or extinguished by Forest Scout school boys)					
Total.....	1,089	190,880 State 1,540				\$60,091 00		\$6,645 40

Note.—Of the total damage, \$60,091, approximately \$38,000 was loss of property in forest fire district, but originating locally and not in the forest grounds and therefore not properly credited to result of forest fires.

FOREST FIRES EXPENSES—Nov. 1, 1912 to Nov. 1, 1913.

	Salary.	Expense.	Total.
Deputy Game, Fish and Forestry Wardens.....	\$10,020 94	\$7,780 63	\$17,801 57
Special fire wardens.....	5,972 80	3,674 75	9,647 55
Sign cloth for posters.....			250 33
Printing posters.....			107 85
Printing forest fire laws.....			3 11
Total.....			\$27,810 41

Note—Of the \$17,801.57, designated in this report as Deputy Game, Fish and Forestry Warden's "salary and expense," approximately \$9,000 is a proper charge against forest fire prevention and suppression. Direct charges against the special annual appropriation of \$10,000 for prevention and suppression of forest fires shows the appropriation with an unused balance of \$352.45, which reverts to the general fund of the State, yet the approximate cost of forest fire prevention and suppression for the year is \$18,647.55.

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